ABSTRACT:

Localization is one of the key issues in the wireless sensors network. Regarding the mobility of the nodes in some of the applications, it is necessary to have a localization algorithm that can support the mobility of nodes. Most of the approaches that have been presented so far have required instruments for the measurement of the distance and the angle or they have needed many beacon nodes for localization. In this paper a demand-based algorithm has been presented which uses these two techniques: the first one is using the localized nodes to localize the unknown nodes and the second one is utilizing the information from localization message by the middle nodes which are located in the return route of the message. Using these two techniques, the suggested method that called ELoc(Efficient Localization) has been able to present a higher speed and range of success, by reducing the sent messages and consequently reducing the energy consumption quite significantly. Furthermore, this method with a high ability of scalability and low complexity can be very efficient in wireless sensor networks. By using Omnet++ simulator software, the ELoc has been compared to Dv-hop and ECLS methods and it has been evaluated. The results of simulation have confirmed the above-mentioned propositions.